AFOSR 68-2151

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LASA DATA SERVICE FINAL REPORT

ARPA Order No.	1004
Project Code No.	7F10
Name of Contractor	TELEDYNE INDUSTRIES, INC.
Contract No.	F44620-67-C-0075
Date of Contract	1 March 1967
Amount of Contract	$ 116,205.00
Contract Termination Date	31 March 1968
Project Manager	Daniel E. Frankowski (703) 836-3882
Short Title of Work	LASA Data Service

Gentlemen:

This is the final report issued by the LASA Data Service and covers the work performed from 1 March 1967 through 31 March 1968.

I. INTRODUCTION

The LASA Data Service (LDS) was established to make LASA data available to all interested users. The standard formats of LASA data are as follows:

1. This document has been approved for public release and sale; its distribution is unlimited.

Film (16 mm)

A. Short-period vertical component data from the center seismometer of each subarray.

B. Long-period three component data from the AO (center subarray) and the D- and F-Ring subarrays.

Magnetic Tape

Standard IBM compatible 800 BPI tapes are recorded in High Rate and Low Rate multiplexed data groups.

A. High Rate digital tapes contain approximately 8 minutes of data from all short period vertical component seismometers, 63 long period components, plus certain phased sum outputs, all digitized at 20 samples per second.

B. Low Rate digital tapes contain approximately 80 minutes of data from the 63 long period components digitized at 5 samples per second, the 21 unphased subarray sums and certain phased sum outputs digitized at 20 samples per second.

II. SERVICES AVAILABLE TO USERS

A. Copies of Films and Digital Tapes.

Utilizing the CDC 604 magnetic tape drive units on lease to the LDS, digital tapes are copied at 200, 556, or 800 bpi. The LDS now has the capability to produce LASA film copies in-house. In addition, enlarged paper prints of the films are available from the LDS. Xerox copies of supporting documents, such as recording calibration information, are also supplied along with the film and tape copies.

B. Film and Tape LASA Data Catalog.

LDS maintains a catalog of all available LASA data. This catalog can be obtained either by request or on a regular monthly basis. The catalog designates the data contained on each tape as noise, event, test, or calibration. Event information such as location, origin time, arrival time, depth, and magnitude is given. A summary by depth and magnitude of all events described in the catalog is also included.

C. LASA Data Publications.

LDS will funish, on request, information concerning publications available through DDC pertaining to LASA travel time and amplitude anomalies, optimum filters, noise studies, seismicity studies, automated bulletins, and array processing.

D. Visitor Facilities.

Space and 16 mm viewers have been provided so that visitors can select data for analysis and/or copying. LASA users are urged to avail themselves of these facilities for their analyses.

E. Event Bulletins.

An event bulletin is prepared daily from data recorded two to three days previously. Weekly summaries are compiled from the daily bulletins. The weekly summary is mailed to subscribers.

In addition, the daily bulletin is maintanied on magnetic tape to facilitate requests for special listing. Copies of this bulletin tape are available on request.

III. WORK COMPLETED

A. The LASA Event Bulletin and Weekly Summary was distributed to the 39 research groups listed in Appendix A.

B. A LASA Data Catalog of all available LASA data was maintained and distributed to the organizations marked by an asterisk (*) in Appendix A.

C. Sixteen millimeter film copies were made in the following manner:

1.	Brown University	36,730 feet
2.	St. Louis University	170 feet
3.	California Institute of Technology	40 feet
	TOTAL	36,940

D. Copies of LASA Multiplexed tapes were supplied to the following research groups:

1.	Southern Methodist University	2
2.	Texas Instruments	29
3.	Lamont Geological Observatory	29
4.	University of California	15
5.	California Institute of Technology	1
6.	Dallas Seismological Observatory	22
7.	University of Michigan	6
8.	AFOSR for H.I.S. Thirlaway	3
9.	Seismic Data Laboratory [1]	49
	Total Tapes Copied	156

E. Paper prints were made for the following research groups

1.	University of Michigan	12
2.	Petty Geophysical Company	20
3.	New Mexico Institute of Mining and Technology	10
4.	St. Louis University	244
	Total Number of Prints	286

[1] The Seismic Data Lab used the program and equipment to copy 49 tapes. Costs were charged to the Seismic Data Lab.

F. Computer Programming Completed

1. A program to copy LASA multiplexed tapes and in addition give the time of the first sample of data and locations of all errors encountered during copying procedures.

2. A program to convert the TWX punched paper tapes (LASA Event Bulletins) to a standard BCD magnetic tape to facilitate using this data on the digital computers.

3. A program to enable changes, additions, or deletions to be made to the LASA Bulletins as they are stored on magnetic tape.

4. A program to retrieve any single LASA Bulletin or all Bulletins between specified dates from the magnetic tape.

5. A program to summarize all events between specified dates by USC & GS geographic region number.

6. Various programs and subroutines to enable the Data Catalog to be updated and printed with a minimum of manual involvement to minimize errors which could occur in the large volume of record-keeping required in the catalog procedures.

7. A program to demultiplex the LASA Low-Rate multiplexed tapes (Long-period sensors only) and convert this data from 18-bit words to 32 or 24 bit words so that it will be compatible for use on IBM 360 or CDC 3000 systems.

G. Travel

1. The SSA convention was attended in March, 1967 for the purpose of announcing the establishment of the LDS.

2. Lincoln Labs was visited in July, 1967 for the purpose of obtaining detailed records of the operational history of LASA.

H. Equipment Purchases

Equipment and supplies were purchased with contract funds as specified by the contract to enable the LDS to fulfill the terms of the contract with a minimum of cost to the government.

I. Miscellaneous tasks were also performed as specified by AFOSR, Technical Monitor, to make LDS more widely publicized and to maintain the capability to offer its services to as many interested groups and individuals as possible.

Very truly yours,

Daniel E. Frankowski

APPENDIX A

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* Also Receives Data Catalog

** Received individual copies of the Bulletin and Data Catalog

*** Received individual copies of the Bulletin